Note-taking Worksheet (continued)

Section 2 Early Space Missions

A. Early space _____ allowed astronomers to study space in ways not possible using telescopes.

1. Special motors that don't require air are called _____.
   - a. _____ rockets cannot be stopped once they are ignited.
   - b. _____ rockets can be reignited after they are shut down.
2. A _____—an object that revolves around another object in an _____, or circular path
   - a. In 1957 the former Soviet Union launched first artificial satellite, _____.
   - b. Today _____ of communication, scientific, and weather satellites orbit Earth.

B. A _____ gathers and transmits information to Earth

1. *Voyager 1* and *Voyager 2* are exploring space beyond the _____ system.
2. _____, first probe to travel through an asteroid belt
3. *Galileo*, launched in 1989, studied Jupiter and two of its moons, _____ and Io.
   - a. Gathered information about Jupiter's _____, temperature, and atmospheric pressure
   - b. Studies of Europa indicate a possible ocean of _____ and the possible presence of life.

C. United States began race for the _____ in 1960s.

1. First step in program to reach the Moon began with **Project** _____.
   - a. In 1961, _____ became first U.S. citizen in space.
   - b. In 1962, _____ became first U.S. citizen to orbit Earth.
2. Second step in the Moon race involved **Project** _____.
   - a. Teams of astronauts met and _____ with orbiting spacecraft.
   - b. _____ of space travel on humans studied.
   - c. Unoccupied space _____ also studied the Moon during Projects Mercury and Gemini.
3. **Project** _____—final step in U.S. program to reach the Moon
   - a. On July 20, 1969, _____ landed on the Moon's surface, and Neil Armstrong and Edwin Aldrin became the first two people to set foot on the Moon.
   - b. _____ lunar landings resulted from Project Apollo, which ended in 1972.
   - c. Most space missions now _____ ventures between countries.

Meeting Individual Needs

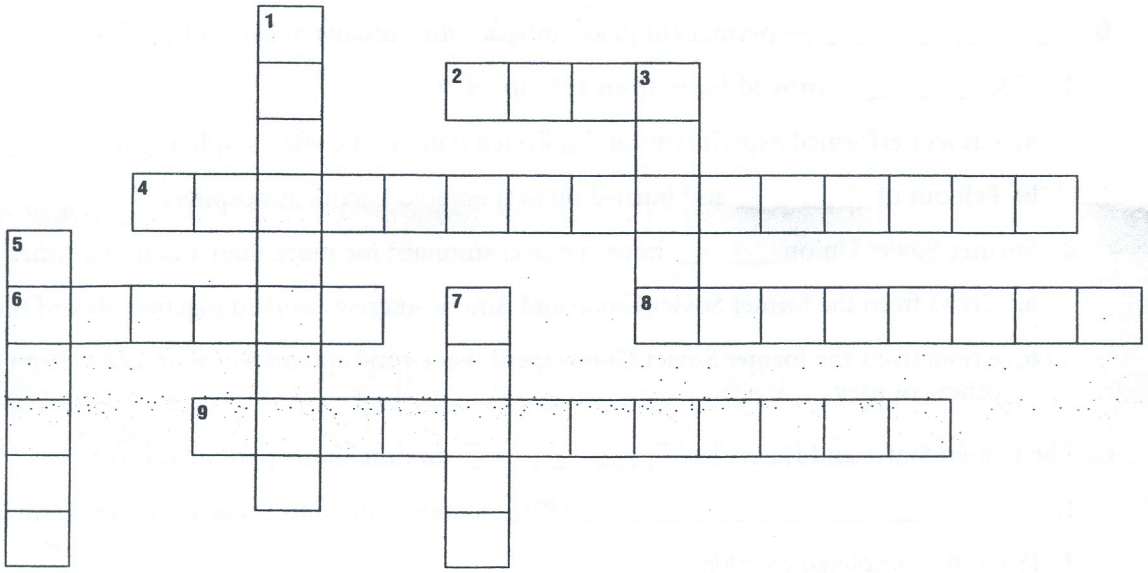
Name Date Class

Directed Reading for Content Mastery

Section 1 ▪ Radiation from Space

Directions: *Use the clues below to complete the crossword puzzle.*

speed of light		**optics**	**lens**	**electromagnetic**
spectrum	**convex**	**radio**	**stars**	**telescope**



Across

2. A piece of curved glass that magnifies objects

4. These waves carry energy through empty space.

6. Active_____ uses a computer to correct for changes.

8. This appears when white light passes through a prism.

9. 300,000 km/s

Down

1. An instrument that produces magnified images of distant objects

3. These can be seen in the night sky.

5. Refracting telescopes use _____ lenses.

7. Radio telescopes pick up these waves.

Teaching Transparency Activity (continued)

1. On the transparency, which figure shows a refracting telescope? a reflecting telescope?

2. What is the focal point of a telescope?

3. What is the purpose of the flat mirror in a reflecting telescope?

4. How does a refracting telescope work?

5. How does a reflecting telescope work?

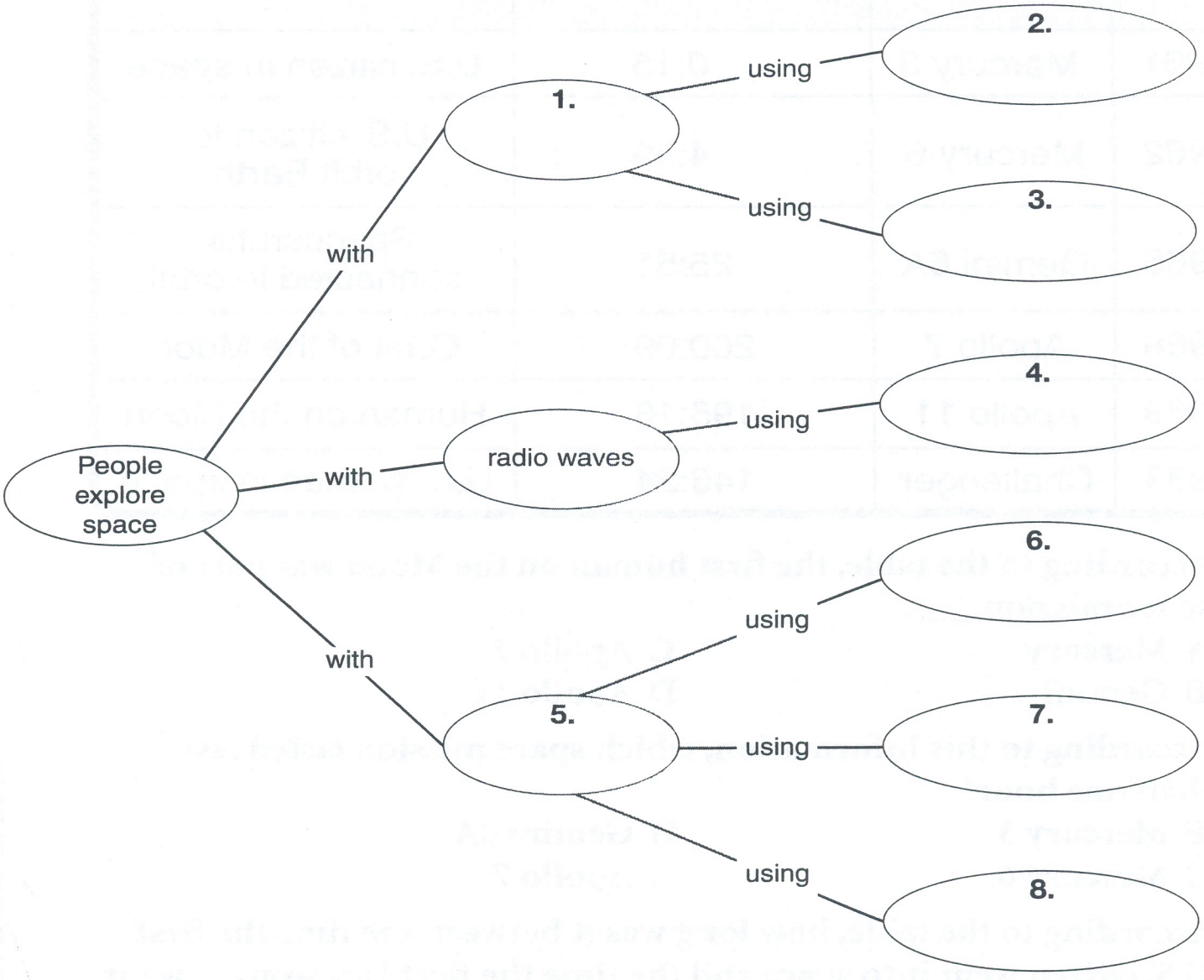
Name Date Class

Directed Reading for Content Mastery

Overview Exploring Space

Directions: *Complete the concept map using the terms in the list below.*

radio telescopes **satellites** **visible light**
space probes **rockets** **reflecting telescopes**
space shuttles **refracting telescopes**



Meeting Individual Needs

Name _____ Date _____ Class _____

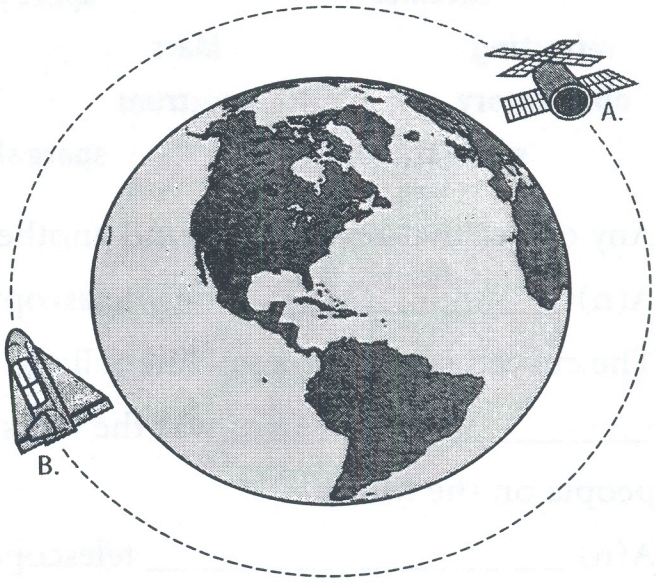
SECTION 3 Reinforcement

Recent and Future Space Missions

Directions: *Identify Figure A and Figure B as a* **space station** *or a* **space shuttle**. *Before each statement at the bottom of the page, write the name of the spacecraft that the item describes. If an item describes both types of spacecraft, write* **both**.

A. _____

B. _____



_____ 1. This spacecraft orbits Earth.

_____ 2. Astronauts were able to conduct experiments when working in this.

_____ 3. This glides back to Earth and lands like an airplane.

_____ 4. The Americans launched *Skylab* in 1973.

_____ 5. This reusable spacecraft transports astronauts and other materials.

_____ 6. Soviet cosmonauts spent a record 365 days aboard one of these.

_____ 7. The *Hubble Space Telescope* was launched in 1990 by one of these.

_____ 8. This spacecraft provides living quarters and working space for people living and working in space.

_____ 9. Several countries may cooperatively build one of these in the future.

_____ 10. Its astronauts move mechanical arms to launch and recover satellites.

_____ 11. The Soviet craft is named *Mir*.

_____ 12. Its solid-fuel booster rockets are reused.

_____ 13. American astronauts spent up to 84 days working in this.

Meeting Individual Needs

Chapter Review (continued)

Directions: *Identify each of the following as a natural satellite* **(N)** *or an artificial satellite* **(A).**

_____ **16.** the Moon

_____ **17.** the space shuttle *Discovery*

_____ **18.** *Skylab*

19. _____ Earth

20. _____ *Sputnik*

Part B. Concept Review

1. Number the early space travel events below in the sequence that they occurred, beginning with 1.

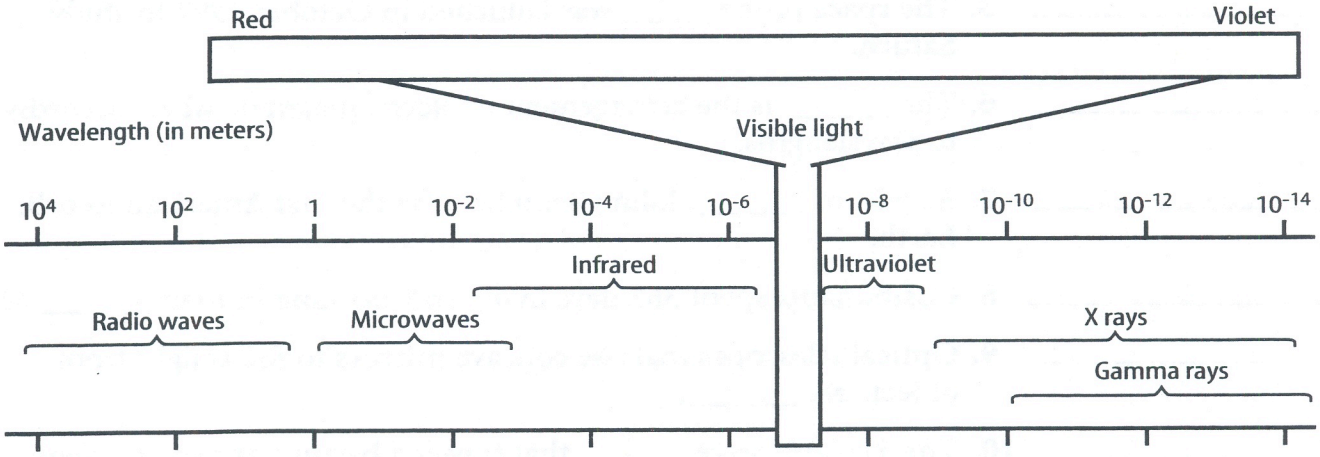
_____ **a.** John Glenn is the first American to orbit Earth.

_____ **b.** Neil Armstrong and Edwin Aldrin land on the Moon.

_____ **c.** Yuri Gagarin becomes the first human to travel in space.

_____ **d.** President John F. Kennedy calls for the United States to place people on the Moon.

Directions: *Use the figure to help you complete each statement. Write the term that completes each statement on the blank provided.*



2. Only X rays and gamma rays are shorter than _____ waves.

3. The electromagnetic radiation with the longest wavelengths is _____.

4. _____ waves are shorter than microwaves and longer than visible light.

5. The electromagnetic radiation with the shortest wavelengths is _____.

6. The wavelengths of visible light are _____ than those of X rays.

Directions: *Answer the following question in complete sentences.*

7. What are some benefits that the space shuttle provides that earlier spacecraft didn't provide?

_____

_____

_____

Assessment